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*Dag Johansen*  
Dag Johansen

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application for:

Steven Teig, et al.

Serial No.: 10/062,196

Filing Date: 1/31/02

For: METHOD AND APPARATUS FOR  
CREATING AN EXTRACTION MODEL  
USING BAYESIAN INFERENCE  
IMPLEMENTED WITH THE HYBRID  
MONTE CARLO METHOD

Examiner: <none yet>

Group Art Unit: 2812

**PRELIMINARY AMENDMENT**

Assistant Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Sir:

The undersigned respectfully requests the patent Examiner to amend the above-identified U.S. patent application as follows before examining the patent application:

IN THE ABSTRACT:

Please add the following abstract paragraph:

**Abstract of the Disclosure**

A system for using machine learning based upon Bayesian inference using a hybrid Monte Carlo method to create a model for performing integrated circuit layout extraction is disclosed. The system of the present invention has two main phases: model creation and model application. The model creation phase comprises creating one or more extraction models using machine-learning techniques. First, a complex extraction problem is decomposed into smaller simpler extraction problems. Then, each smaller extraction problem is then analyzed to identify a set of physical parameters that fully define the smaller extraction problem. Then, for each of the smaller simpler extraction problems, complex mathematical models are created using machine learning techniques. The machine learning is performed by first creating training data sets composed of the identified parameters from typical examples of the smaller extraction problem and the answers to those example extraction problems as solved using a highly accurate physics-based field solver. Next, the system uses Bayesian inference implemented with a hybrid Monte Carlo method to train a set of neural networks for extraction problems. After the creation of a set of models for each of the smaller simpler extraction problems, the machine-learning based models may be used for extraction.

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REMARKS

In response to the Notice to File Missing Parts dated 3/4/2002 and the Notice of Incomplete Reply dated 7/5/02, the Applicants submit the enclosed Abstract of the Disclosure to formalize the Application. However, the Applicants submit that a full response containing all the required items to respond to the Notice to File Missing Parts of 3/4/2002 was previously submitted to the U.S. PTO in the previous response dated June 3, 2002. (The enclosed Abstract of the Disclosure merely corrects informality.) Thus, no additional fee is required.

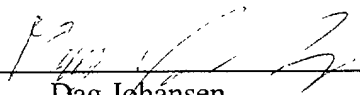
The Applicant respectfully requests that the Examiner enter the above amendment. The Applicant respectfully requests examination at the earliest possible date.

The Assistant Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this transmittal and associated documents, or to credit any overpayment to **Deposit Account No. 50-1128** referencing SPLX.P0113.

Respectfully submitted,

STATTLER, JOHANSEN & ADELI LLP

Dated: July 29, 2002

  
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